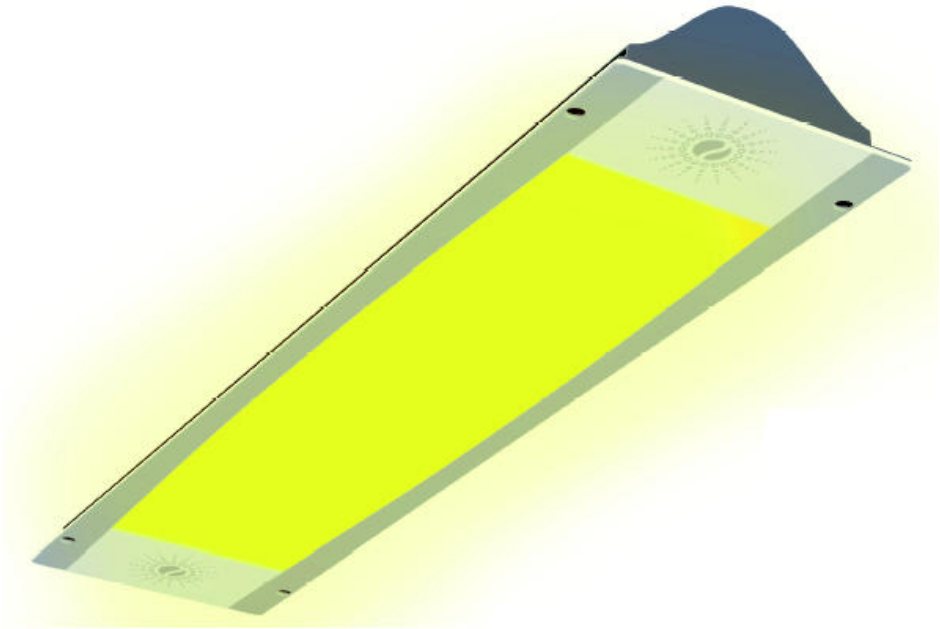
WAVE.COM4
SOUND&LIGHT
OPERATING INSTRUCTIONS



Consisting of:
coloured lamp and
operating element
sound&light

LED-Coloured lamp sound&light

Description	LED- Coloured lamp sound&light
Order reference	AB0210000001 (wave.com4 sound&light coloured lamp set) AB0211000101 (sound&light operating element)
for company	
Author	Florian Aichstill
Version	V01
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CONTROLLED BY

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1.0.0 GENERAL

1.1.0 INTRODUCTION

Welcome to the user manual for the innovative, high-tech coloured lamp sound&light.

This user manual is designed to help you start up the LED coloured lamp and connect it to the appropriate parts of the sauna control ”wave.com4“.

You can operate the coloured lamp in 2 connection modes.

a) Single – operating element master - mode

Pure colour led control, no sauna function, can only be operated with one operating element.

Hardware (connected to the bus bar):

- one colour operating element and
- one or more LED power elements + associated LED coloured lamp

b) Sauna – operating element slave - mode

The colour-led control is integrated into the sauna control and the operating element acts as a slave here.

Hardware (connected to the bus bar):

- Colour operating element
- the sauna base section
- one or more LED power elements + associated LED coloured lamp

2.0.0 MANUFACTURER'S DECLARATION

We
ABATEC® Electronic AG
Oberregauer Straße 48
A-4844 Regau

hereby declare in relation to the product below

wave.com4 sound&light Coloured lamp set AB0210000001

consisting of:
Coloured lamp AB0210000101
Colour operating element AB0211000101
Control element AB0212000101

that it complies with the following directives

Low-Voltage Directive 2006/95/EC
EMC Directive 2004/108/EC

applied harmonised standards:

	Standard designation
1	EN 60335-1: A12:06
2	EN 60335-2-53: 03+A1:2007
3	EN 50366:06

ABATEC Electronic AG
Dipl.Ing. Friedrich Niederndorfer, MBA

We reserve the right to make technical changes in the interests of progress. This description has been drafted to the best of our knowledge. Please inform your dealer or us if you find any errors therein. **Many thanks!**

ABATEC Electronic AG **for:**

Please note: The distribution of the colour lamp for the operation in steam showers is exclusively carried out by the company Artweger!

3.0.0 FITTING INSTRUCTIONS

3.1.0 DIMENSIONS / FITTING OPERATING ELEMENT + USB DOCK

Operating element: L x W x D = 120 x 92 x 50 mm; ~200 g without cable and loose; differences possible depending on customer finishes.

USB DOCK: L x W x D= 30 x 92 x 9.5 mm
Recess size: 40 x 25 mm

Fitting suggestion:

To fit the operating element, a normal **hole cutter Ø 70 mm** is required.

Insert the colour operating element into the fitting hole and fasten to the sauna wall using the 4 screws supplied. The operating element can be fitted either outside or inside the sauna cabin.

3.2.0 FITTING THE CONTROL ELEMENT

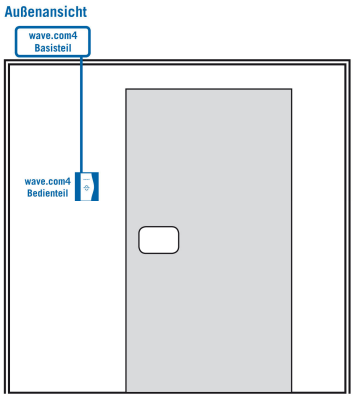


Figure 1

The power element is fitted preferably on the part of the cabin roof where the cables come together. (see Image. 1) Open the housing. The cover can be removed. The electrical connection must **comply with standards**. The connection diagram is described in Chapter 3.4.0.

3.3.0 FITTING THE COLOURED LAMP

- Dimensions

L x W x D = 780 x 185 x 75 mm
light-emitting surface = 620 x 150 mm
Recess size 765 x 158 x 75 mm

~2000 g without cable and loose

Removing the transportation lock

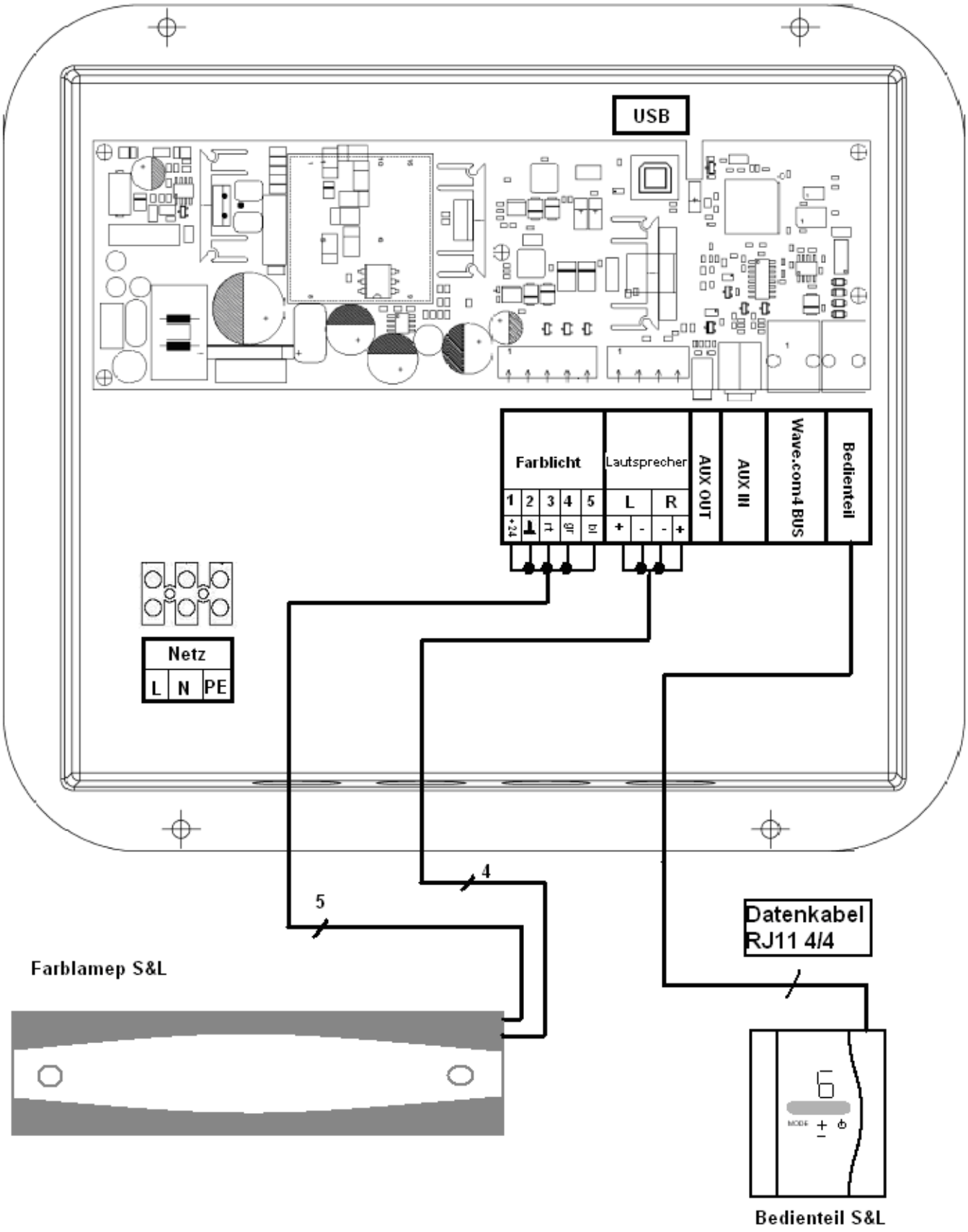
⚠ **Remove transportation lock from the coloured lamp before using:**

- Completely unscrew the two set screws on the back side of the housing counter clockwise with the enclosed socket wrench.
- Next insert the two enclosed plastic covers into the vent.
- Remove the transportation lock note from the coloured lamp.

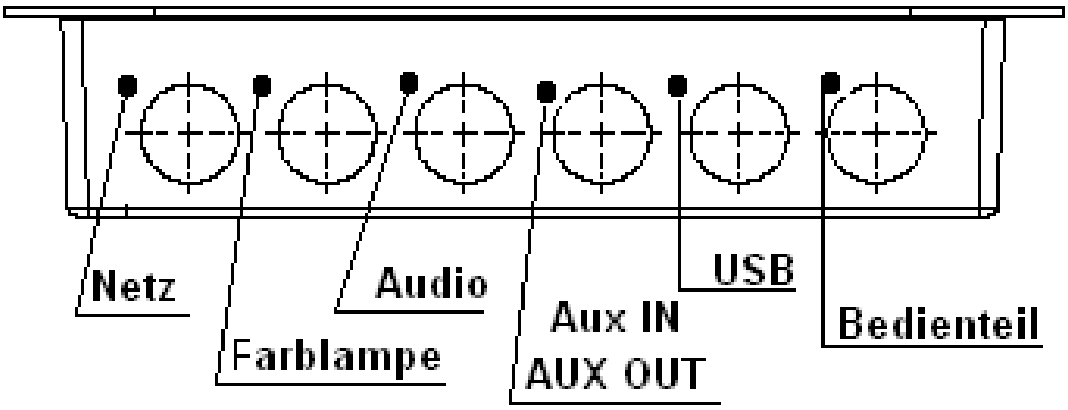
Fitting suggestion

- **Fitting on sauna ceiling not right above the oven** (Max. 130℃ on the front pain)
- Fitting recess 765 x 158 mm; do not enlarge recess, to ensure fitting is water-tight (!).
- Rear free for cooling (max. 30℃ ambient temperatur e, NB: 80℃ housing temperature is possible)
- 4 mounting holes are pre-drilled on the front of the coloured lamp
- However, depending on the sauna design or the weight of the coloured lamp (approx. 3kg) further fastening measures (e.g. screws from the front, etc.) may be required
- You should also ensure that the coloured lamp is sealed on the sauna ceiling

3.4.0 CONNECTION DIAGRAM



Kabeldurchführungen



4.0.0 OPERATING INSTRUCTIONS FOR THE END USER

4.1.0 GENERAL SAFETY NOTICES

- Please be aware that the components in the housing of the coloured lamp are operated with dangerous mains voltage
- Do not connect or disconnect any live components! Always isolate the mains connection beforehand using the appropriate circuit breaker in the building's distribution system.
- Electrical switch-off must be completed in all poles in line with the relevant regulations of the local Electricity Boards.
- Electrical work should only be carried out by a qualified expert. Any interventions by unauthorised persons shall render the warranty null and void. There is also a risk of serious electric shocks of live parts are touched.
- Keep the controls away from heat sources.
- Before start-up, check that all connections are properly connected and that no cables or parts are damaged

4.2.0 OPERATION

4.2.1. FUNCTION DESCRIPTION

The following description gives an overview of the programme functions and operating elements of the coloured lamp wave.com4 sound&light.

4.2.2. OPERATING ELEMENTS

SWITCH ONE-/OFF

By pressing the key, the coloured lamp and the sound function are switched on or off.

The colour control changes into the last activated mode (automatic or manual) and the normal internal lighting goes out. (only in the sauna – operating element slave – mode)

MODE-KEY

By pressing the

key, the individual operating modes of the coloured lamp can be selected.

+/- KEY

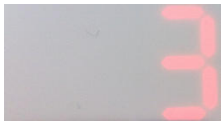
By pressing the key, parameters like colour, brightness and volume can be changed.

4.2.3. TABLE OF COLOURS

Each colour number is allocated a chroma. (Standard on delivery).

Colour number	Chroma	Brightness	Red	Green	Blue
1	**Red**	20	20	0	0
2	**Yellow**	20	20	20	0
3	**Green**	20	0	20	0
4	**Turquoise**	20	0	20	18
5	**Blue**	20	0	0	20
6	**Purple**	20	18	0	20
7	**White**	20	17	20	20

4.2.4. MODES

Mode Light	Display Symbols	Description
Off		The coloured lamp is in the standby mode.
Automatic colour		The chroma is automatically further switched after the programmed time. The chroma can be manually further switched. When colour 7 ends, the control again changes to colour 1 (=rollover). If the mode is activated, this is shown with “A” on the display.
Brightness		The brightness of the particular chroma can be set in this mode. The adjusted brightness will be adopted for all 7 colours (0-20).
Manual		The chroma never changes. No time lapse. The display shows die number belonging to the active chroma. The +/- keys can be used to select the colour desired.
Mode Sound	**Display symbols**	**Description**
Switch on-/off		Select sound function with Mode key and by pressing the ON/OFF key, de-/activate the MP3 function. When the MP3 function is switched on again, it starts with the last settings
Play		MP3 is finished, using the +/- T the previous or the next track can be selected.
Shuffle		The shuffle mode is activated or deactivated again by simultaneously pressing the +/- key. The display shows ”Shu“. The MP3 files on the USB stick are played in random order.
AUX		If no USB stick is connected to the USB dock and the sound function is selected, the AUX mode is activated. The music from an external source is played. (Ipod, MP3-player, radio, etc.)

Volume		With Mode key to volume menu. Volume can be set in stages with +/- keys (0- 20).

4.3.0 PROGRAMMING FUNCTIONS

The following points provide information on the programmability of the LED coloured lamp. These settings are stored in a power failure-proof manner

4.3.1. PROGRAMMING CYCLE TIME

The coloured lamp automatically changes, with the exception of ”Manual“ mode, the chroma when the *Cycle time* ends. This *Cycle time* is 5 minutes when delivered. It can be adjusted in minute steps.

Proceed as follows:

1. On the operating element with the

MODE key, go to **”Automatic-colour“** mode.
2. Press the key simultaneously for approx. 3 sec.
3. The programmed *cycle time* in minutes and the symbol flashes in the display.
4. Use the key to change the *cycle time*.
5. By pressing the

key twice, confirm the input and thus leave the programming.

4.3.2 PROGRAMMING COLOUR TRANSITION PERIOD

This is the time the LED control takes on change of colour (manual or at the end of the interval period), for the colour drift from the current to the next colour.

1. On the control element with the MODE key, go into "**Automatic colour**" mode.
2. Press simultaneously for approx. 3 sec

   (NB: do not change the colour number in the process!)
3. Pressing the MODE key twice takes you into the setting menu.
4. The current colour transition time in seconds and the symbols and flash.
5. With the keys, the colour transition period is extended or shortened. Each change of colour the occurs with this programmed time.
6. By pressing the MODE key once, confirm the input and thus leave the programming.

4.3.3 PROGRAMMING COLOURS

The coloured lamp mixes the desired chroma from the 3 LED-base colours (Red-Green-Blue). This mix can be programmed. This gives the customer the option of programming his personal colours behind the colour numbers.
Range of the individual components of the colour is always 0 to 20 (5%steps)

1. On the operating element with the MODE key, go into **"Manual"** mode.
2. Press together and **simultaneously** for approx. 3 sec

   (NB: do not change the colour number in the process!)
3. The programmed **RED** – portion of the chroma flashes in the display.
4. Changeable with and with the MODE key MODE confirm the input

5. The programmed **GREEN** – portion of the chroma flashes in the display.
6. Changeable with and with the MODE key confirm the input
7. The programmed **BLUE** – portion of the chroma flashes in the display
8. Changeable with and with the MODE key confirm the input

On completion of all inputs, the control is again in **”Manual“** mode

4.3.2. MASTER / SLAVE PROGRAMMING

Here you can set to decide whether the operating element is used in the

- Single/Master operation
- Selection „SIN“, (=standard setting,) without Wave.com4 sauna base section as master
- Setting for pure colourLEDcontrol without sauna function

or in

- Slave operation
- Selection „SAU“, with sauna base section as Master
- Setting for use with Wave.com4 Sauna control

1. Disconnect 4-pin bus/supply cable from the operating element
2. Simultaneous pressing of the keys
3. Plug in cable again when pressing the key.
4. The display flashes and the mode set for the operating element appears (SIN or SAU)
5. Set the mode with the keys.
6. Confirm input with the key and jump to the ”Remote start activation“ (see 4.3.5. REMOTE START activate/ deactivate)

4.3.3. REMOTE START ACTIVATE/ DEACTIVATE

In the remote start mode, the coloured lamp switches after connection of the mains voltage to the last den activated operating mode. (no standby operation) The remote start function is activated as follows:

1. After setting and confirming the mode (SIN/SAU) by pressing the MODE key, the remote start setting flashes

   (Po0 or Po1)

2. Set the operating mode with the keys.

Po0…….no remote start mode
Po1…….remote start mode active

3. Confirm inputs with MODE to save the changes

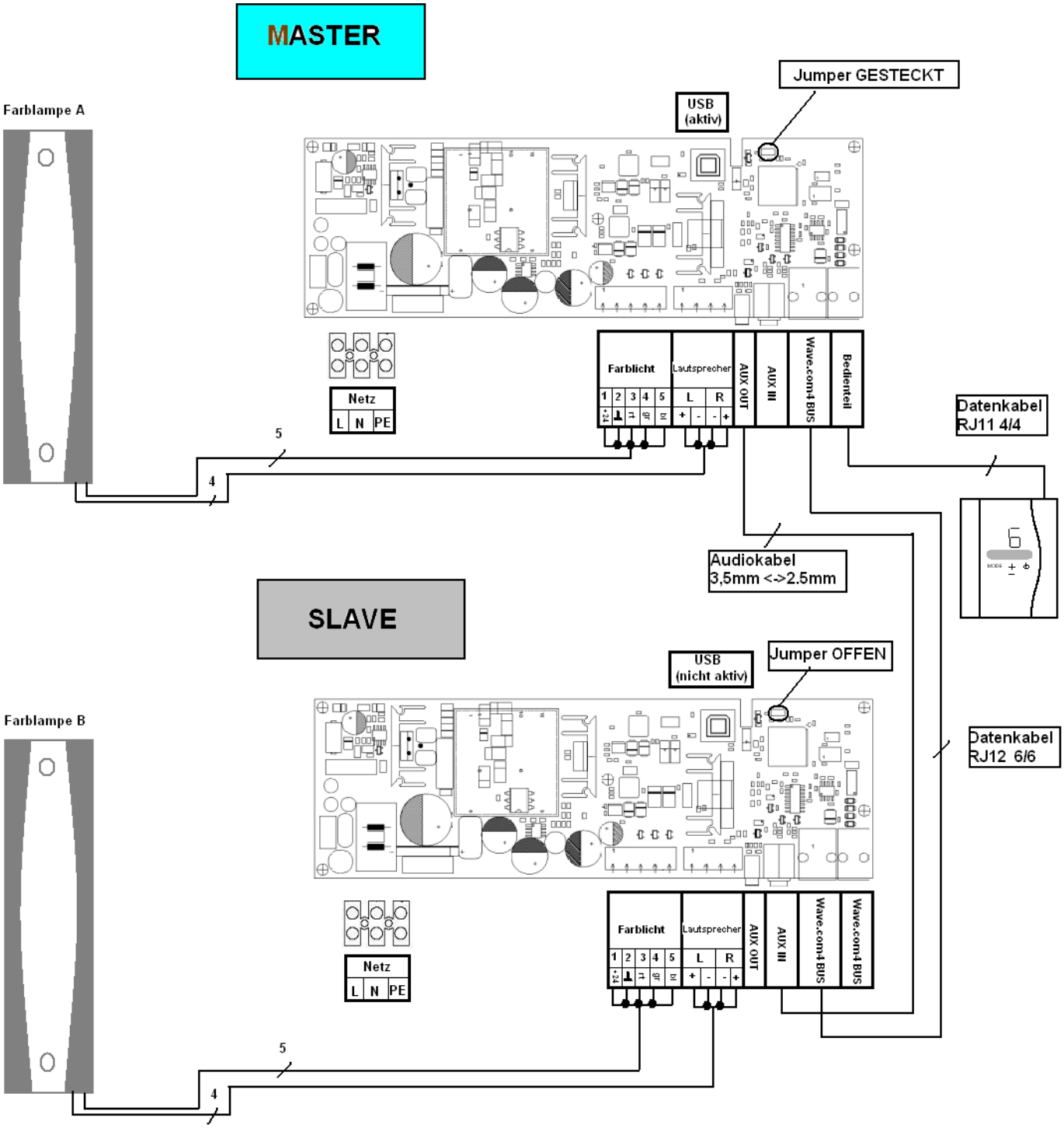
5.0.0 CONNECTION OF SEVERAL sound&light COLOURED LAMPS

Up to 4 sound&light coloured lamps can be controlled via an operating element. To allow this, the power elements are connected to each other via a BUS line (RJ12 or RJ11 cable) and controlled via the LED coloured light operating element. The LED coloured lamps connected to an operating element can not be individually controlled but only together.

There must be a power element defined to which the operating element is connected and from which the music data (MP3 or AUX) are given.
This is done via a jumper located on the power element board:

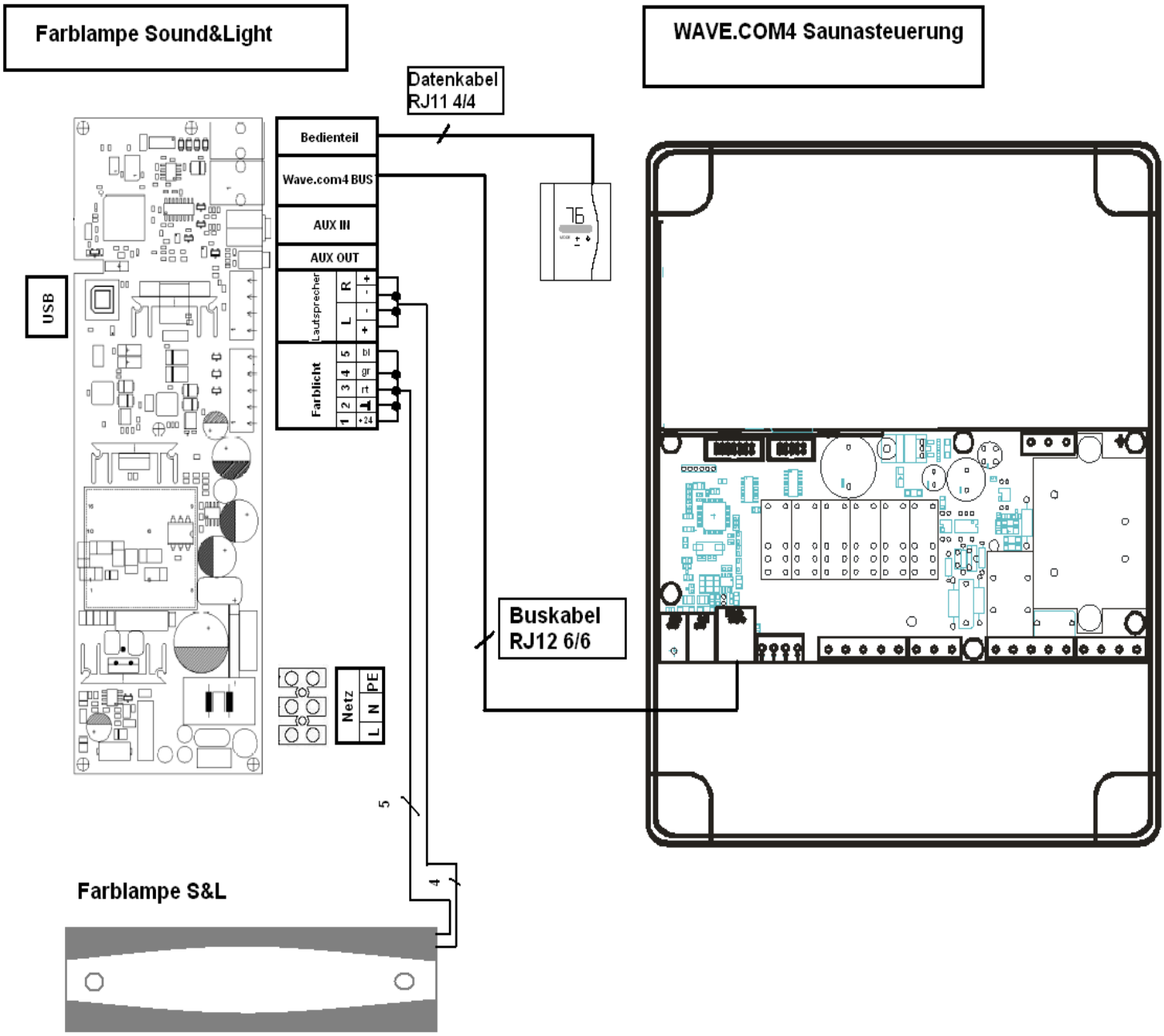
Jumper closed (delivery status)	**Jumper open**
Power element MASTER	Power element SLAVE

Connection diagram:



6.0.0 CONNECTION TO THE wave.com4 SAUNA CONTROL

Connection diagram:



7.0.0 FAULTS, CAUSES, SOLUTIONS

This list shows possible problems, their causes and recommended procedure for resolving them.

Fault	Possible cause
The display of the colour module cannot be activated	Check power supply to the power element. If this is in order but none of the symbols on the display lights, then check the **data connection** of the colour operating element;
Colour lamp does not light although the colour operating element shows colour numbers	No lamp supply between LED coloured lamp and LED power element; Check cables/terminals; and if need be check the programming (brightness of the individual colours)
The colour of the lamp and the numbers on the display change but do not correspond	Check connection sequence of the connection between LED coloured lamp and LED power element
One colour and its mixed colours are missing	Check terminal wire of the connection between LED coloured lamp und LED power element and if need be check the programming (brightness of the individual colours)
The colour of the lamp and the numbers on the display do not change	Set to “Automatic“ mode; If need be connect through manually and if need be check the programming (interval period of the individual colours)
The colour of the lamp and the numbers on the display change automatically	Set to “Manual“ mode; If need be check programming (interval period of the individual colours)

8.0.0 TECHNICAL DATA

8.1.0 OPERATING ELEMENT

Connection:	4-pin with supply and communication lines (3m)
Power consumption:	5V= / <100 mA normal operation (<0.5 W)
Ambient conditions:	0℃ – 130℃, max. 99 % rel. hum idity, non-condensing!
Housing:	Flush-mounted box; board; optical fibre for display; wooden front with temperature-resistant foil. Board over M2.5 bolt on wooden front; rear with flush-mounted box
Mounting:	Fasten to the sauna wall with the screws supplied
Dimensions USB-dock:	L x W x D= 30 x 92 x 9.5 mm

8.2.0 LED POWER ELEMENT

Supply:	3-pin 230V +/-6%; 50Hz; with protective conductor (PE)
Power consumption:	Depending on chroma and brightness max. 50W.
Ambient conditions:	0-50℃, max. 95% rel. h. non-co ndensing
Housing:	Plastic housing with cover L x B x H = 243 x 214.5 x 70 mm
Mounting:	Fasten housing with screws to the sauna cabin

8.3.0 LED COLOURED LAMP

Connection:	At least 5x0.75mm² +;4x0.5 mm² for Audio with 5m silicone cable
Power consumption:	Depending on chroma and brightness max. 50W
Ambient conditions:	Glass surface: max. 130℃ outside Rear: max. 30℃ ambient temperature
Housing:	L x W x D = 780 x 185 x 75 mm Light-emitting surface = 620 x 150 mm Size of recess 765 x 158 x 75 mm With full timber cabins additional frame into the ceiling element and make the recess larger accordingly.
Mounting:	As per sauna design or with 4 wood screws onto the sauna ceiling

NOTES:

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